

## Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure

Page 2 of 8

Serial No.: 09/497,967

Confirmation No.: 8124

Filed: February 4, 2000

For: DIAGNOSTIC AND PROTECTIVE ANTIGEN GENE SEQUENCES OF ICHTHYOPHTHIRIUSAmendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

- 1.-2. (Canceled)
3. (Currently Amended) An isolated nucleic acid molecule comprising a polynucleotide fragment having a nucleotide sequence that encodes an antigenic portion of an i-antigen polypeptide having amino acid sequence SEQ ID NO:7, said antigenic portion of the i-antigen polypeptide comprising ~~at least about 60 amino acids and being capable of inducing an immune response in a fish against *I. multifiliis* amino acids 21-452 of SEQ~~ SEQ ID NO:7.
4. (Currently Amended) An isolated nucleic acid molecule comprising a polynucleotide fragment having a nucleotide sequence that encodes at least one terminal membrane targeting portion of an i-antigen polypeptide having amino acid sequence SEQ ID NO:7, said terminal membrane targeting portion ~~comprising at least about 10 amino acids and being capable of targeting a polypeptide to either the endoplasmic reticulum or to the plasma membrane wherein said terminal membrane targeting portion is encoded by SEQ~~ ID NO:19 or SEQ ID NO:20.
5. (Previously Presented) An isolated nucleic acid molecule comprising a polynucleotide fragment having a nucleic acid sequence that encodes SEQ ID NO:7.
6. (Previously Presented) The nucleic acid molecule of any of claims 3-5 or 36 that is a vector capable of expressing the polypeptide encoded by the nucleic acid sequence in a *Tetrahymena* host cell.

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Page 3 of 8

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7.- 9. (Canceled)

10. (Currently Amended) An isolated nucleic acid molecule comprising at least 50 nucleotides that hybridizes with any of the nucleic acid molecules of claims 3-5 or 36 under conditions exemplified by about 150 mM NaCl, 15 mM trisodium citrate, and pH 7.6 at 55°C.

11. (Currently Amended) An isolated nucleic acid molecule comprising a polynucleotide fragment comprising at least 50 nucleotides that hybridizes to ~~at least a portion of the~~ complement of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:44, SEQ ID NO:19, SEQ ID NO:20 or SEQ ID NO:102 under conditions comprising about 150 mM NaCl, 15 mM trisodium citrate, and pH 7.6 at 55°C, ~~wherein the polynucleotide fragment encodes a polypeptide comprising at least a membrane targeting portion or an antigenic portion of an i-antigen protein, wherein said antigenic portion is capable of inducing an immune response in a fish.~~

12.-13. (Canceled)

14. (Previously Presented) A composition for inducing an immune response in a fish, said composition comprising at least one nucleic acid molecule of any of claims 3-6, 10, 11 or 36.

15.-16. (Canceled)

17. (Original) The composition of claim 14 wherein administration of the composition to fish prevents or controls *I. multifiliis* infection.

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Page 4 of 8

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18. (Currently Amended) The composition of claim 14 wherein the polypeptide encoded by the nucleotide sequence is ~~encodes an antigenic portion of an i-antigen polypeptide~~ linked at its carboxy-terminus to a plurality of molecules of the C3d component of complement.
19. (Original) The composition of claim 14 formulated for oral administration.
20. (Currently Amended) The composition of claim 19 wherein the ~~polypeptide or nucleic acid molecule~~ is encapsulated in a biodegradable polymer.
21. (Previously Presented) A *Tetrahymena* host cell transformed with the nucleic acid molecule of claim 6.
22. (Canceled)
23. (Previously Presented) Transformed *Tetrahymena* comprising the nucleic acid molecule of any of claims 3-6, 10, 11 or 36.
- 24.-35. (Canceled)
36. (Previously presented) The nucleic acid molecule of claim 5 comprising at least one nucleotide sequence selected from the group consisting of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:44 and SEQ ID NO:102.
37. (Canceled)
38. (New) A nucleic acid molecule which is complementary to any of the nucleic acid molecules of claims 3-5 or 36.